

## Project name

Hayes Park West (Be Lean)

As designed

Date: Mon Sep 15 12:32:18 2025

## Administrative information

## Building Details

Address: Address 1, City, Postcode

## Certifier details

Name: Hoare Lea

Telephone number: +44 1454201020

Address: 155 Aztec West Almondsbury, Bristol, BS32 4UB

## Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.26

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.26

BRUKL compliance module version: v6.1.e.1

Foundation area [m<sup>2</sup>]: 51.95The CO<sub>2</sub> emission and primary energy rates of the building must not exceed the targets

Target CO <sub>2</sub> emission rate (TER), kgCO <sub>2</sub> /m <sup>2</sup> annum	2.53
Building CO <sub>2</sub> emission rate (BER), kgCO <sub>2</sub> /m <sup>2</sup> annum	2.24
Target primary energy rate (TPER), kWh <sub>PE</sub> /m <sup>2</sup> annum	27.3
Building primary energy rate (BPER), kWh <sub>PE</sub> /m <sup>2</sup> annum	24.28
Do the building's emission and primary energy rates exceed the targets?	BER =< TER   BPER =< TPER

## The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U <sub>a-Limit</sub>	U <sub>a-Calc</sub>	U <sub>i-Calc</sub>	First surface with maximum value
Walls*	0.26	0.15	0.15	LG000000:Surf[3]
Floors	0.18	0.11	0.11	LG000000:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.11	0.11	LG000000:Surf[1]
Windows** and roof windows	1.6	1.2	1.2	LG000001:Surf[2]
Rooflights***	2.2	-	-	No roof lights in building
Personnel doors <sup>^</sup>	1.6	1.15	1.6	LG000007:Surf[1]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building

U<sub>a-Limit</sub> = Limiting area-weighted average U-values [W/(m<sup>2</sup>K)]U<sub>i-Calc</sub> = Calculated maximum individual element U-values [W/(m<sup>2</sup>K)]U<sub>a-Calc</sub> = Calculated area-weighted average U-values [W/(m<sup>2</sup>K)]

\* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

\*\* Display windows and similar glazing are excluded from the U-value check. \*\*\* Values for rooflights refer to the horizontal position.

<sup>^</sup> For fire doors, limiting U-value is 1.8 W/m<sup>2</sup>K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m <sup>3</sup> /(h.m <sup>2</sup> ) at 50 Pa	8	3

## Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	YES
Whole building electric power factor achieved by power factor correction	0.9 to 0.95

1- HayesPark: Split system (amenity)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
<b>This system</b>	2.64	6.4	0	-	0.8
<b>Standard value</b>	2.5*	5	N/A	N/A	N/A
<b>Automatic monitoring &amp; targeting with alarms for out-of-range values for this HVAC system</b>					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

1- HayesPark: DHW (Electric POU)

	Water heating efficiency	Storage loss factor [kWh/litre per day]
<b>This building</b>	1	-
<b>Standard value</b>	1	N/A

### Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	SFP [W/(l/s)]										HR efficiency	
	A	B	C	D	E	F	G	H	I	Zone	Standard	
<b>ID of system type</b>												
<b>Standard value</b>	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1			
LGF_Amenity areas	-	-	-	1.5	-	-	-	-	-	-	N/A	

Zone name	General lighting and display lighting		General luminaire	Display light source	
	Efficacy [lm/W]	Power density [W/m <sup>2</sup> ]	Efficacy [lm/W]	Power density [W/m <sup>2</sup> ]	
<b>Standard value</b>	95	0.3	80	0.3	
LGF_plant room	120	-	-	-	
LGF_circ	120	-	-	-	
LGF_entrance corridor	120	-	-	-	
LGF_bike parking	120	-	-	-	
LGF_refuse store	120	-	-	-	
LGF_Amenity areas	120	-	-	-	

**The spaces in the building should have appropriate passive control measures to limit solar gains in summer**

<b>Zone</b>	<b>Solar gain limit exceeded? (%)</b>	<b>Internal blinds used?</b>
LGF_Amenity areas	NO (-96.3%)	NO

**Regulation 25A: Consideration of high efficiency alternative energy systems**

<b>Were alternative energy systems considered and analysed as part of the design process?</b>	YES
Is evidence of such assessment available as a separate submission?	NO
Are any such measures included in the proposed design?	YES

# Technical Data Sheet (Actual vs. Notional Building)

## Building Global Parameters

	Actual	Notional
Floor area [m <sup>2</sup> ]	303.7	303.7
External area [m <sup>2</sup> ]	651.6	651.6
Weather	LON	LON
Infiltration [m <sup>3</sup> /hm <sup>2</sup> @ 50Pa]	3	3
Average conductance [W/K]	102	185.42
Average U-value [W/m <sup>2</sup> K]	0.16	0.28
Alpha value* [%]	25	10

\* Percentage of the building's average heat transfer coefficient which is due to thermal bridging

## Building Use

% Area	Building Type
<b>21</b>	<b>Retail/Financial and Professional Services</b>
	Restaurants and Cafes/Drinking Establishments/Takeaways
	Offices and Workshop Businesses
	General Industrial and Special Industrial Groups
	Storage or Distribution
<b>79</b>	<b>Hotels</b>
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
	Residential Institutions: Universities and Colleges
	Secure Residential Institutions
	Residential Spaces
	Non-residential Institutions: Community/Day Centre
	Non-residential Institutions: Libraries, Museums, and Galleries
	Non-residential Institutions: Education
	Non-residential Institutions: Primary Health Care Building
	Non-residential Institutions: Crown and County Courts
	General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger Terminals
	Others: Emergency Services
	Others: Miscellaneous 24hr Activities
	Others: Car Parks 24 hrs
	Others: Stand Alone Utility Block

## Energy Consumption by End Use [kWh/m<sup>2</sup>]

	Actual	Notional
Heating	1.26	2.42
Cooling	0.28	0.59
Auxiliary	3.22	3.16
Lighting	9.23	10.17
Hot water	2.18	2.07
Equipment*	58.65	58.65
<b>TOTAL**</b>	<b>16.16</b>	<b>18.41</b>

\* Energy used by equipment does not count towards the total for consumption or calculating emissions.

\*\* Total is net of any electrical energy displaced by CHP generators, if applicable.

## Energy Production by Technology [kWh/m<sup>2</sup>]

	Actual	Notional
Photovoltaic systems	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>0</i>	<i>0</i>

## Energy & CO<sub>2</sub> Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m <sup>2</sup> ]	16.5	34.13
Primary energy [kWh <sub>PE</sub> /m <sup>2</sup> ]	24.28	27.3
Total emissions [kg/m <sup>2</sup> ]	2.24	2.53

## HVAC Systems Performance

System Type	Heat dem MJ/m <sup>2</sup>	Cool dem MJ/m <sup>2</sup>	Heat con kWh/m <sup>2</sup>	Cool con kWh/m <sup>2</sup>	Aux con kWh/m <sup>2</sup>	Heat SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER
<b>[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity</b>									
<b>Actual</b>	68.4	28	7.3	1.6	13.3	2.59	4.78	2.64	6.4
<b>Notional</b>	141.7	57.8	14.2	3.5	8	2.78	4.63	----	----
<b>[ST] No Heating or Cooling</b>									
<b>Actual</b>	0	0	0	0	0	0	0	0	0
<b>Notional</b>	0	0	0	0	0	0	0	----	----

### Key to terms

Heat dem [MJ/m <sup>2</sup> ]	= Heating energy demand
Cool dem [MJ/m <sup>2</sup> ]	= Cooling energy demand
Heat con [kWh/m <sup>2</sup> ]	= Heating energy consumption
Cool con [kWh/m <sup>2</sup> ]	= Cooling energy consumption
Aux con [kWh/m <sup>2</sup> ]	= Auxiliary energy consumption
Heat SSEFF	= Heating system seasonal efficiency (for notional building, value depends on activity glazing class)
Cool SSEER	= Cooling system seasonal energy efficiency ratio
Heat gen SSEFF	= Heating generator seasonal efficiency
Cool gen SSEER	= Cooling generator seasonal energy efficiency ratio
ST	= System type
HS	= Heat source
HFT	= Heating fuel type
CFT	= Cooling fuel type